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STUDY OF SOIL COVER IN THE CHAPAYEVSK-VLADIMIROVKA AND KAMYSHIN-STALINGRAD STATE SHELTER BELTS

S. P. Yarkov

The Department of Soil Science, headed by Academician V. P. Bushinskiy, of the Timiryazev Agricultural Academy has been taking an active part in the study of soil cover along the route of the projected state shelter belts which are to run between Chapayevsk and Vladimirovka and between Kamyshin and Stalingrad. The Department of Soil Science undertook this work jointly with the Faculty of Agrochemistry and Soil Science (V. V. Williams, dean).

S. P. Yarkov, M. N. Pershina, and D. I. Papazov, departmental lecturers, were chosen to supervise the work. In addition to a number of qualified soil scientists, 24 graduate students specializing in agrochemistry and soil science participated in the expedition.

The Department of Analytical Chemistry of the Academy set up a special laboratory for analyzing soil samples taken from the route of the state shelter belts.

At present, the field work and most of the analytical work have been completed.

Detailed soil maps of the route to be followed by the two belts have been compiled in scale 1:10,000 and a forest planting study has been completed, in addition to a study of the soils on which trees are to grow.

In the soil study, a definite pattern of change in the soil cover and the effect of this pattern on forest growing qualities was established. This pattern has great theoretical and practical significance. The study established an interesting pattern of soil change from southern chernozems to dark chestnut and light chestnut soils. In the chestnut soil regions, it was discovered that the appearance of solonized and solonets soils was associated to a great degree with the appearance of evidence of activity by earth-burrowing animals. Valuable information was collected on the effect of the age of various regions in the area on soil cover formation. On the more recent relief features of the areas, soil cover was formed mostly by evolutionary processes peculiar to

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dry areas. Sharp transitions were observed there from one subtype of soil to others, according to the differing development patterns of the various regions.

In the soil survey of shelter belt routes, new data was obtained on the influence of soil cover on forest growing qualities. Exposure of a slope greatly affects these qualities. Slightly or moderately solonized soils do not always signify a change in forest growing qualities, but higly solonized soils have a negative effect on initial growing conditions.

Meadow chernozems and meadow chestnut soils display the best forest growing qualities.

The Lysenko nest planting method, when carried out according to his instructions, not only creates the best possible conditions for the forest to overcome harmful vegetation but also assures the most rapid development of favorable growing conditions in the soil. Above all, it aids accumulation of moisture in the soil.

The nation's soil scientists must solve difficult problems in connection with the Stalin plan for the transformation of nature. Although in the past the division of land areas into soil zones, subzones, and soil regions as well as the separation of soils into various varieties was a purely theoretical problem, at present this classification system assumes a concrete and productive significance.

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